The Risk of Inflation

Concerned about the unexpected pickup in growth in the U.S. economy and the low level of real short-term interest rates, the Federal Reserve increased the federal funds rate by 1¼ percentage points in the first half of 1994. Policymakers at the Federal Reserve noted that the rapid growth of late 1993 and early 1994 and the speed at which excess capacity in the economy was being eliminated increased the probability of higher inflation over the next two years. Short-term interest rates needed to rise, they argued, in order to curb future inflationary pressures.

Is the inflationary threat real? Although estimates of the highest level of output that can be sustained without inducing higher inflation are uncertain, continued growth in excess of 2½ percent is indeed likely to exacerbate inflation eventually. The pressures are not yet great, however, and inflation should not pick up for a year or so, even if the pressures do become more intense.

The Economy Has Little Excess Capacity

The major indicator of the economy's ability to expand production rapidly without risking higher inflation is the unemployment rate. Right now, it indicates that the economy is at a high level of resource use (see Box 1-1). Therefore, in contrast to the three years since the recession ended in early 1991, any further expansions of output cannot now rely on underused resources. Instead, the rate of growth the economy can maintain at steady inflation rates is limited by the trends in the labor supply, capital stock, and productivity.

The unemployment rate has dipped into a range that indicates a mildly inflationary situation. One measure of labor market capacity--the nonaccelerating inflation rate of unemployment (NAIRU)--is based on the historical relationship between inflation and the unemployment rate (see Appendix B). If the historical relationship continues to hold and the unemployment rate falls below the NAIRU, inflationary pressures will slowly build; if unemployment rises above the NAIRU, disinflationary forces will prevail. How much the inflation rate changes depends on the size and the duration of the difference between actual unemployment and the NAIRU. Currently, the NAIRU is estimated to be about 6 percent.

With the unemployment rate at 6.1 percent in July and the near-term outlook indicating (aside from the statistical uncertainties caused by the new employment survey) that it will slip further, pressures on inflation are likely to increase. Economic expansion along the lines of the CBO forecast would presumably bring down the unemployment rate to about 5¾ percent by the last half of 1995. The resulting increase in the underlying rate of inflation is apt to be small--on the order of about one-quarter of a percentage point by the end of next year. CBO estimates that the current underlying rate of inflation is between 2¾ percent and 3 percent, so given the forecast for unemployment, inflation would increase to a little over 3 percent by late 1995.

The concept of the NAIRU has been useful for explaining short-term movements in inflation in the past, but it helps to clarify only the effects of excess demand (see Box 1-2). Numerous events can have short-term effects on inflation, such as droughts, oil supply shocks, changes in excise taxes, and import prices. These events could have a much larger effect on inflation during the forecast period than changes in excess demand. CBO has not, however, built any major supply shocks into its forecast for inflation through 1995.

The growth of wage rates and unit labor costs has not yet increased. Usually, however, increases in wage rates and unit labor costs lag the tightening of labor markets, so one should not be sanguine about the lack of any acceleration to date. Gains in hourly labor compensation over the past four quarters have remained at 3 percent, and productivity, though slipping recently, grew 2.6 percent over the past year. This combination of growth in wages and productivity has kept the growth of unit labor costs at 0.4 percent over this period. Inflationary pressures from labor costs, therefore, have not yet started to build.

The drop in the unemployment rate below the NAIRU suggests, however, that inflation in labor costs will accelerate slightly during 1995. Wage gains are likely to pick up as labor markets tighten, and productivity growth is expected to fall off as it usually does in a late expansion. Thus, growth in unit labor costs will be higher than during the past year, though not so large as to cause a sharp increase in inflation.

Some analysts suggest that the standard NAIRU analysis overstates the tightness of the labor market. Various other indicators of the degree of labor market tightness, such as the volume of help-wanted advertising and the percentage of unemployed people who are not just on a temporary layoff, imply more slack than does the NAIRU analysis. The help-wanted index has risen much less during this expansion than it did in previous expansions, and, when adjusted for biases in the way the data are collected, the help-wanted index appears quite low.

Although these conflicting signals about the labor market introduce some uncertainty into the forecast, the relationship between inflation and unemployment has been closer in the recent past than between inflation and other measures of slack in the labor market. Thus, the CBO forecast anticipates slightly higher inflation stemming from labor market pressures.

Other Considerations

Signal Inflation

Other indicators of future inflation also imply that inflationary pressures are building somewhat. Capacity utilization and recent movements in some

Box 1-1.
A New Measure of the Unemployment Rate

The Bureau of Labor Statistics (BLS) introduced new survey methods for the unemployment rate in January 1994. These changes make it difficult to compare the earlier data with that currently reported. Moreover, the change in the survey might have distorted the picture of improvements in the labor market over the first half of this year.

The unemployment rate is derived from the Current Population Survey (CPS). The Bureau of Labor Statistics undertook a major redesign of the CPS in January 1994 to improve the accuracy and quality of the labor statistics drawn from this survey of households. The redesigned survey obtains more accurate information about participation in the labor force, most notably for women. The BLS also computerized the survey process, data collection, and transmission to reduce errors.

Various background studies led the BLS to anticipate that the unemployment rate reported after the redesign would be higher than under the old procedures. The new survey was expected to result in higher measured unemployment because it reduced the likelihood that women who were looking for work would be misclassified as "keeping house." Although most analysts thought that the unemployment rate would rise by between 0.4 and 0.6 percentage points with the shift to the new measure, many are less certain now that six months of data are available. The new measure may be closer to the old one than previously thought--only about one-quarter of a percentage point higher.

The new series may also not reflect recent trends accurately. The unemployment rate during the period of the new survey has fallen rapidly, from 6.7 percent in January 1994 to 6.1 percent in July. But the measure reflects seasonal adjustments that try to purge typical seasonal changes in the unemployment rate (such as a surge in hiring during Christmas) in order to represent underlying trends better, and these seasonal adjustments are based on the patterns of past years. The new survey has no history of seasonal patterns, however, so the seasonal adjustments of the old survey have been used to adjust the new data. This new method may be causing an over- or understatement of the decline in the unemployment rate since January. Therefore, the rapid drop in the unemployment rate this year may not be an accurate reflection of recent trends in the labor market.

producer prices are causes for concern, but fears of rapid inflation stemming from the drop in the dollar or commodity price hikes appear to be overblown.

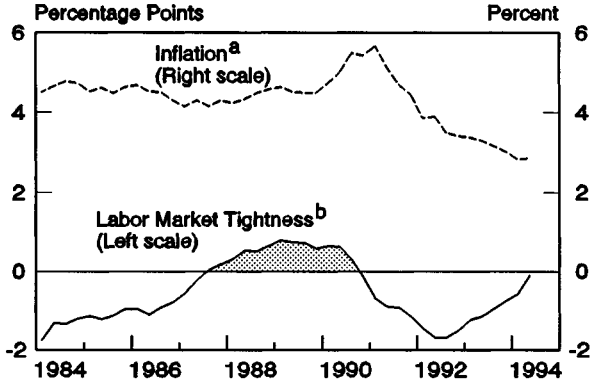
The reduction in excess capacity in manufacturing suggests that concerns about inflation are warranted, though inflation is unlikely to increase rapidly. The capacity utilization rate for manufacturing shows a high level of resource use, and some industrial prices have increased. The utilization rate is currently above 82 percent, a level that has been associated with an increase in goods inflation during the past 20 years. However, few industries have significantly raised prices to date. The overall producer price index for finished goods has risen only slightly over the last year, with only scattered in-

Box 1-2.
Using the NAIRU to Forecast Inflation

The historical experience from 1987 to 1990 illustrates the usefulness of the concept of the nonaccelerating inflation rate of unemployment (NAIRU) in forecasting inflation. During that period, the NAIRU signaled inflation, and inflation developed on cue. Even the magnitude of the increase in inflation was close to the expected amount.

By CBO's estimate, excess demand developed near the end of 1987--that is, the actual unemployment rate fell below the estimated NAIRU level (6 percent for that year, based on the old unemployment survey). Aggregate demand continued to grow faster than the 2½ percent potential growth rate of the economy during 1988 and 1989. The unemployment rate fell farther as a result, and ultimately wage and price inflation increased.

Higher Inflation Follows Labor Market Tightening



SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

NOTE: Shading indicates the period when labor market conditions are inflationary.

a. Consumer price index for all urban consumers (CPI-U), excluding food, energy, and used cars.

b. Labor market tightness is measured as the difference between CBO's estimate of the NAIRU and the actual unemployment rate.

Yet inflation did not increase right away. The underlying rate of inflation (as measured by the consumer price index excluding food and energy) remained virtually unchanged throughout the 1987-1989 period, even though the unemployment rate averaged 5.3 percent from mid-1988 to the end of 1989. It was not until late 1989, two years after the unemployment rate fell below the NAIRU, that inflation picked up. Eventually, the underlying rate climbed from 4.2 percent in 1987 to 5.4 percent in the last half of 1990 (see Figure).

The increase in the underlying rate of inflation was consistent with a commonly used rule of thumb for forecasting the inflationary effect of maintaining an unemployment rate below the NAIRU. The rule of thumb states that whenever the actual rate of unemployment is 1 percentage point below the NAIRU for a year, the underlying rate of inflation will increase by about one-half of a percentage point. That is, if the NAIRU is 6 percent and the actual unemployment rate remains at 5 percent for a year, there will be one point-year of "excessive" employment for that year, and the underlying rate of inflation would be about one-half of a percentage point higher than it would have been if the unemployment rate had been 6 percent.

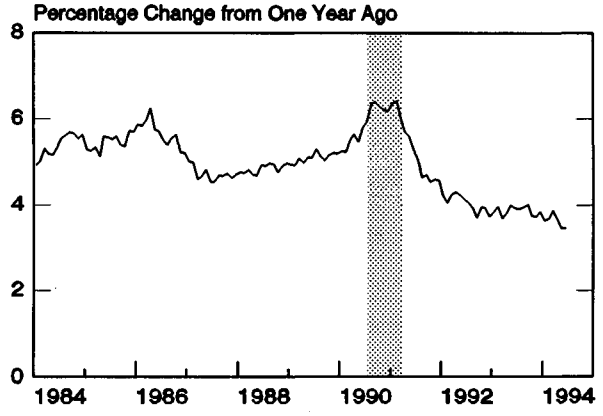
According to the point-year rule, the underlying rate of inflation should have increased about 1 percentage point between late 1987 and the onset of the recession in mid-1990. The underlying inflation rate rose by 1.2 percentage points, a close match.

creases in construction materials, motor vehicles, and some chemicals and metal products.

The recent increase in capacity constraints in manufacturing may not have much effect on the consumer price index (CPI), even if changes in the prices of goods did pick up. Changes in the CPI are not closely related to changes in the overall prices of goods, since the overlap between the goods sector and the set of prices included in the CPI is relatively small. The price of goods accounts for less than 44 percent of the items in the CPI, and, if food and energy--goods whose prices are not closely related to capacity utilization--are excluded, goods account for only about 21 percent of the CPI. The prices of services in the CPI will ultimately accelerate as excess resources are reduced, but prices for services will not increase rapidly. Inflation in services has fallen to about 3½ percent, and it will probably increase slowly, as it did in 1988 and 1989 (see Figure 1-8).

Two indicators of potential inflation have been widely cited--the decline in the dollar and the increase in commodity prices. But both are unlikely to be significant. Some analysts believe the drop in the dollar against the German mark and the Japanese yen in the first half of this year will cause import prices and the prices of U.S.-produced goods that compete with imports to increase. Even though the value of the dollar fell 7.8 percent between January and July relative to the 10 major industrial countries, the drop is unlikely to cause a significant increase in the prices of imported goods. The recent weakness of the dollar is relatively small and, to date, only reverses an increase in the dollar that occurred during late 1992 and 1993 (see Figure 1-9).

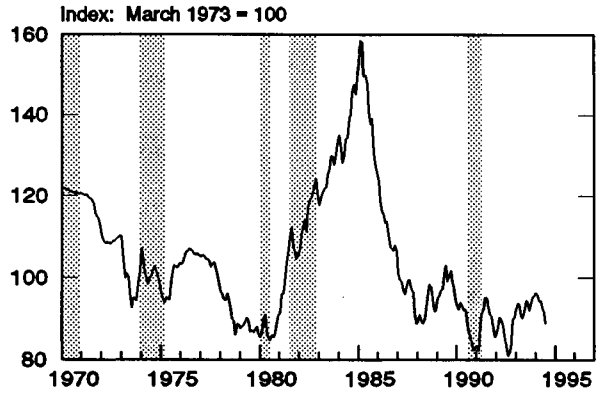
Figure 1-8.
The Prices of Services Are Slow to Accelerate



SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

NOTE: Growth year-over-year in the consumer price index for services less energy services. Based on monthly data through July 1994.

Figure 1-9.
Putting Recent Dollar Weakness in Perspective



SOURCES: Congressional Budget Office; Federal Reserve Board.

NOTE: Trade-weighted index relative to the currencies of 10 countries: Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, and the United Kingdom. Based on monthly data through July 1994.

The increase in commodity prices during the first half of this year has also been mentioned as a possible indicator of an increase in inflation. Commodity prices are not, however, a reliable signal of higher inflation. Commodity price indexes have risen numerous times in the past for six-month periods without any accompanying increase in CPI inflation. In addition, commodity price indexes have eased recently.

Prices of petroleum--one of the most important commodities--jumped between February and June, and they have increased only slightly since then; CBO does not anticipate that oil prices will experience any further sharp increases. Although the rise

in petroleum prices will probably lead to a one-time increase in gasoline and fuel oil prices in late summer, energy costs are unlikely to exacerbate inflation after that time.

Short-Term Interest Rates Will Increase Again

Early this year, signs of strong economic growth and the tightness of labor markets prompted the Federal Reserve to raise the interest rate on federal funds. Its goal was to ease the nascent inflationary pressures and thereby increase the likelihood of a prolonged expansion. Although it became clear as the year progressed that interest rates should rise--in fact, they would have probably risen somewhat without Federal Reserve actions--how much higher short-term rates have to go to limit growth to a sustainable pace remains uncertain. The three-month Treasury bill rate increased about 1.35 percentage points between January and July, and long-term rates jumped even more. Moreover, 10-year Treasury notes climbed from 5.8 percent to 7.3 percent during the same period.

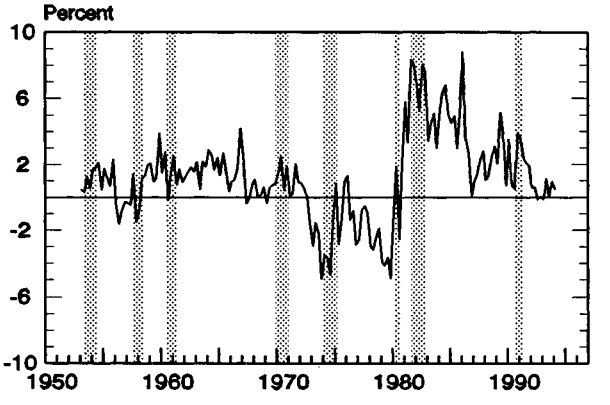
CBO anticipates that short-term rates will have to increase further, by perhaps 1½ to 2 percentage points before mid-1995, in order to slow economic growth to a sustainable pace (that is, GDP growth of less than 3 percent). Although real short-term interest rates rose during the first half of this year, they are still quite low compared with similar periods of late expansion. Moreover, real short-term rates are currently well below long-term rates, and are expected to rise given general pressures for higher real rates in the mid-1990s.

Real Short-Term Interest Rates. Real short-term interest rates were inordinately low during 1993, averaging 0.5 percent (see Figure 1-10).[5] Such low real interest rates could not persist for extended periods without ultimately overstimulating the economy and risking higher inflation. By early August of this year, the real short-term rate had sprung up sharply, but will probably climb further given historical experience. The nominal three-month Treasury bill rate was 4.3 percent, and the real rate was about 1.2 percent in early August.

When the economy is in, or close to, a late expansion phase (that is, at or nearing full employment), real short-term interest rates usually climb above 2.5 percent. In two periods, 1973 to 1974 and 1979 to 1980, the commonly used proxy for real rates implies low real rates (see Figure 1-10). However, those periods were affected by major supply shocks (primarily, sharp increases in oil prices), so that the increase in inflation was unexpected and therefore the proxy for real rates was less useful. Although the behavior of real rates during those periods is not clear, without a major inflationary supply shock, real short-term rates on the order of 2.5 percent are the historical norm.

Another pattern in previous expansions is the narrowing of the difference between short- and long-term interest rates late in the expansion, as the

Figure 1-10.
Real Short-Term Interest Rates Are Still Low



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Federal Reserve Board.

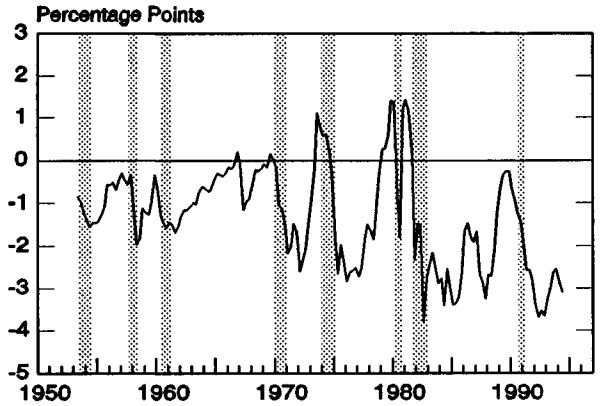
NOTE: The real short-term interest rate is calculated by subtracting the growth of the consumer price index at an annual rate for all urban consumers over the subsequent three-month period from the three-month Treasury bill rate. Quarterly averages are shown.

5. Real interest rates cannot be measured directly, since they depend on expectations of inflation that are unknown. A commonly used proxy, the nominal interest rate less actual (as opposed to expected) inflation, is used here.

Federal Reserve slows the growth of the money supply (see Figure 1-11). If this pattern holds up through this expansion, short-term rates will probably have to rise further. The current spread between short- and long-term rates is extremely large, particularly given the stage of the business cycle. Normally, short-term rates increase faster than long-term rates, and the difference between the two narrows as the expansion progresses.

The spread, however, has not narrowed this year. Long-term rates jumped by a surprisingly large amount early this year when short-term rates started to increase, a response that appears to have stemmed from a reassessment of the risk of short-term rates increasing much more rapidly in the future than was previously thought. The perception of an increased risk of higher short-term rates, in turn, could have been affected by a reassessment of the risk of future inflation, particularly given the news that the economy was much stronger than forecast. CBO anticipates that long-term interest rates will ease over the next year and a half, as inflation remains relatively mild and growth is tempered during 1995, but the easing will be slow. Therefore, the narrowing of the spread is likely to occur primarily as short-term rates rise.

Figure 1-11.
The Interest Rate Spread Usually Narrows Late in Expansions



SOURCES: Congressional Budget Office; Federal Reserve Board.

NOTE: The interest rate spread is the three-month Treasury bill rate minus the yield on a 10-year Treasury note.

General Pressures for Higher Interest Rates. A number of trends indicate that real short-term interest rates will be greater than the current 1.2 percent--trends in the saving behavior of the government and private sector in the United States, the recovery of the industrialized countries of Europe and Japan, and the increasing capital demands of newly industrialized countries.

Real interest rates have varied widely over the postwar period. The current real short-term interest rate is about the same as the rate that prevailed during the historical period from 1953 to 1967. Over that period, large supply shocks were absent and inflation was quite low--averaging 1.5 percent. Consequently, this time frame can be used, tentatively, as a standard of comparison for the mid-1990s.

By that standard, real interest rates are likely to rise from current levels. One factor pushing up real rates in the 1990s is the relatively low national saving rate. Despite the progress in deficit reduction over the past four years, the projected federal budget deficit is a much larger share of GDP--2.5 percent--for the remainder of the 1990s than it was in the 1953-1967 period, when the federal deficit averaged 1.1 percent of GDP. In addition, private saving is much lower. Gross saving by businesses and households averaged 16.3 percent of GDP from 1953 through 1967, but has recently averaged about 12.6 percent of GDP. The continued high level of government borrowing, combined with low private saving, will put pressure on capital markets and on real interest rates.

The growth of foreign economies is another reason to expect higher real interest rates. In the mid-1990s, the European countries and Japan will have recovered from their current economic difficulties. And CBO has long anticipated that world capital demands, driven by development needs in Eastern Europe, the former Soviet Union, Latin America, and the newly industrialized countries of Asia, are likely to increase. The North American Free Trade Agreement is also likely to encourage capital investment in Mexico, although this demand will be small in relation to the size of the world capital market.

Projections for the Years Beyond 1995

CBO projects that real GDP will grow at an average annual rate of 2.2 percent over the medium term--that is, between 1996 and 1999 (see Tables 1-3 and 1-4). The projection for real growth assumes that the unemployment rate will average 6 percent during that period (under the new definition of the unemployment rate). Inflation, measured by the annual rate of change in the CPI-U, is assumed to average 3.4 percent during that period. The three-month Treasury bill rate, which is forecast to increase between now and mid-1995, is expected to decline gradually thereafter. The 10-year Treasury note rate averages 6.5 percent between 1996 and 1999.

Table 1-3.
Medium-Term Economic Projections for Calendar Years 1994 Through 1999

		Forecast		Projected			
	1993	1994	1995	1996	1997	1998	1999
Nominal GDP (Billions of Dollars)	6,378	6,777	7,161	7,523	7,893	8,277	8,687
Nominal GDP (Percentage change)	5.6	6.3	5.7	5.1	4.9	4.9	5.0
Real GDP (Percentage change)	3.0	4.0	3.0	2.4	2.1	2.1	2.2
Implicit GDP Deflator (Percentage change)	2.5	2.2	2.5	2.6	2.7	2.7	2.7
Fixed-Weighted GDP Price Index (Percentage change)	3.1	2.7	3.0	3.2	3.3	3.4	3.4
CPI-U (Percentage change)[a]	3.0	2.6	3.1	3.3	3.4	3.4	3.4
Unemployment Rate (Percent)[b]	*6.8*	6.2	5.8	5.9	6.0	6.1	6.1
Three-Month Treasury Bill Rate (Percent)	3.0	4.1	5.5	5.1	4.9	4.9	4.9
Ten-Year Treasury Note Rate (Percent)	5.9	6.8	6.8	6.5	6.5	6.5	6.5
Tax Bases (Percentage of GDP)							
Corporate profits	7.3	7.5	7.2	7.0	6.8	6.7	6.6
Other taxable income	20.5	20.5	20.2	20.3	20.4	20.4	20.5
Wage and salary disbursements	48.3	48.5	48.9	49.0	48.9	48.9	48.8
Total	76.1	76.5	76.4	76.3	76.1	76.0	75.9

SOURCE: Congressional Budget Office.

a. Consumer price index for all urban consumers (CPI-U).

b. The Bureau of Labor Statistics changed the unemployment survey in January 1994. The CBO projections reported in this table use the new survey methodology. Data for 1993, shown in italics, use pre-1994 methodology.

CBO's medium-term projections do not reflect any attempt to estimate cyclical movements of the economy during the 1996-1999 period or the effects of fiscal policy on the year-to-year changes in economic activity. Instead, CBO's projection for real growth is designed to approximate the level of economic activity on average, including the possibility of above- or below-average growth. The projection for potential GDP is based on an analysis of the fundamental factors underlying the economy, including growth of the labor force, the rate of national saving, and growth of productivity. CBO projects the path for real GDP by assuming that it will grow smoothly to reach its average historical relationship with potential GDP by 1999 (see Figure 1-12).

Table 1-4.
Medium-Term Economic Projections for Fiscal Years 1994 Through 1999

		Forecast		Projected			
	1993	1994	1995	1996	1997	1998	1999
Nominal GDP (Billions of dollars)	6,295	6,677	7,070	7,431	7,800	8,179	8,581
Nominal GDP (Percentage change)	6.0	6.1	5.9	5.1	5.0	4.9	4.9
Real GDP (Percentage change)	3.2	3.9	3.3	2.5	2.2	2.1	2.2
Implicit GDP Deflator (Percentage change)	2.7	2.1	2.5	2.6	2.7	2.7	2.7
Fixed-Weighted GDP Price Index (Percentage change)	3.2	2.6	3.0	3.1	3.3	3.4	3.4
CPI-U (Percentage change)[a]	3.0	2.6	3.0	3.2	3.4	3.4	3.4
Unemployment Rate (Percent)[b]	*7.0*	6.3	5.9	5.8	6.0	6.1	6.1
Three-Month Treasury Bill Rate (Percent)	3.0	3.7	5.3	5.2	4.9	4.9	4.9
Ten-Year Treasury Note Rate (Percent)	6.2	6.4	6.9	6.6	6.5	6.5	6.5
Tax Bases (Percentage of GDP)							
Corporate profits	7.1	7.6	7.3	7.0	6.9	6.7	6.6
Other taxable income	20.6	20.5	20.3	20.3	20.4	20.4	20.5
Wage and salary disbursements	48.7	48.4	48.9	49.0	48.9	48.9	48.8
Total	76.4	76.5	76.5	76.4	76.2	76.0	75.9

SOURCE: Congressional Budget Office.

a. Consumer price index for all urban consumers (CPI-U).

b. The Bureau of Labor Statistics changed the unemployment survey in January 1994. The CBO projections reported in this table use the new survey methodology. Data for 1993, shown in italics, use pre-1994 methodology.

Growth

The projection for the years beyond 1995 is unusual in that the strong growth in the short-term forecast leaves the level of real GDP slightly above potential output at the end of 1995. Therefore, real GDP must grow more slowly than potential GDP in order to restore the gap between the two to its historical average. In the CBO projection, the growth of real GDP averages 2.2 percent between 1996 and 1999, slightly slower than the growth of potential GDP, which averages 2.4 percent during the same period. These rates of growth leave real GDP about 0.4 percent below the level of potential GDP in 1999, roughly equal to the average historical gap between these two variables.

CBO's projection for the growth of potential output is little changed since last winter's report. However, several of the components that underlie the projection of potential output have been revised. In its winter report, CBO highlighted three sources of uncertainty about the projection for potential output: the level of the NAIRU, slow growth of the labor force, and rapid growth of total factor productivity (TFP). Each has been revised since the winter forecast, but the revisions largely offset one another.

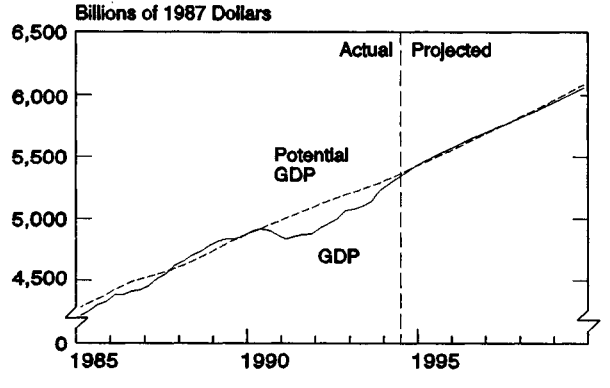
The Upward Revision to the NAIRU. CBO reestimated the benchmark used to measure the state of the business cycle, the nonaccelerating inflation rate of unemployment (see Appendix B for a description of how the NAIRU is estimated). Using the old definition of the unemployment rate, the value of the new estimate is about 5.8 percent in 1993, or about 0.3 percentage points above the earlier estimate. The practical effect of this revision is to show that the economy was operating closer to its productive capacity in 1993 and early 1994 than previously thought. For example, under the earlier estimate of the NAIRU, CBO estimated that the gap between output and potential output was about 2 percent at the end of 1993. The new estimate, together with the strong growth of real GDP in the fourth quarter of 1993, implies that the gap was much smaller, perhaps 1.2 percent at the end of 1993, and has been virtually eliminated during the first half of 1994. The higher estimate of the NAIRU also indicates that the trend growth of potential output is slightly slower than previously thought.

CBO reestimated the NAIRU because of a growing consensus that the economy is rapidly approaching its productive capacity and could be in danger of overheating. The new estimate differs from the old for three reasons: first, it is calculated using a longer data sample; second, the data used for the calculation have been revised; and third, a new (and conceptually superior) measure of inflation is used for the calculation (see Appendix B).

The upward revision to the NAIRU is unrelated to the revision to the Current Population Survey (CPS) undertaken by the Bureau of Labor Statistics in early 1994 (see Box 1-1 for a discussion of the CPS revision). CBO estimates that the change in the CPS adds another one-quarter of a percentage point to the NAIRU, starting in 1994. Therefore, on the new basis, the estimate of the NAIRU is about 6 percent in early 1994. The adjustment for the new survey technique, however, is subject to an extreme degree of uncertainty and will be monitored in coming months to determine whether it is still justified.

Slower Growth of the Labor Force. As CBO pointed out in last winter's report, growth of the labor force has been unusually slow since the last business cycle ended in 1990. This slowdown stems primarily from a decline in the growth of par-

Figure 1-12.
Potential GDP Governs the Projection of GDP



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

ticipation rates in the labor force--the percentage of the working-age population that has or is actively seeking a job--not in a slowing of population growth. The major unresolved question is whether the tapering off of growth in the participation of women in the labor force and the fall in the participation rates of young people--both of which occurred about 1990--were short-run responses to a cyclic slowdown in employment opportunities or whether they represent a fundamental change in the preferences toward work of some members of the working-age population.

In the past, CBO's projections for growth in the labor force embodied an assumption that the slowdown was exclusively a short-run phenomenon and that participation rates would eventually regain their earlier trend. However, the experience of the last six months has added weight to the argument that participation rates will not rebound as much as previously thought. Currently, CBO projects that the labor force will grow at an average of 1.3 percent during the period from 1996 through 1999, a rate that is about 0.1 percentage point below that assumed last winter.

The Rapid Growth of Total Factor Productivity. Although the years since the recession have been somewhat bleak for employment growth, they have witnessed impressive gains in productivity. Newly released data indicate that total factor productivity grew 2 percent in 1993, building on a hefty 2.7 percent gain in 1992.[6] Both of these rates are above the trend rate observed since the early 1980s, and both have raised CBO's estimate of trend growth in TFP. The improved outlook for productivity, combined with a stronger outlook for investment in capital goods, has offset the downward pressure on growth of potential output caused by the higher NAIRU and slower growth of the labor force.

6. These estimates of total factor productivity were calculated by CBO. TFP is a measure of the productivity of both labor and capital. A more comprehensive measure than labor productivity, it is defined as the growth in output above the growth of labor and capital inputs.

Inflation

CBO projects that the gradual rise in the rate of inflation during the short-term forecast will taper off in the years beyond 1995, and the growth of the CPI-U (consumer price index for all urban consumers) will average 3.4 percent a year during the medium term. The GDP deflator is projected to grow at an average rate of 2.7 percent between 1996 and 1999. Both of these projections are higher than was foreseen last winter because the economy is closer to potential than was previously thought.

Interest Rates

CBO projects that interest rates, both long- and short-term, will decline slightly between 1996 and 1999, though their ultimate levels are higher than what was projected last winter. The projection for the three-month Treasury bill rate drops from 5.6 percent at the end of 1995 to 4.9 percent during 1996 and thereafter. The 10-year Treasury note rate eases from 6.6 percent at the end of 1995 to 6.5 percent during 1996 and remains steady at that rate through 1999.

Risks to CBO's Economic Forecast

The CBO economic forecast reflects a middle path among the uncertainties that affect any forecast. But it is certainly not the only possible outcome. Forecasters typically discuss two other views: a typical mature expansion through the end of 1995 (which would carry a high risk of a recession sometime after the 1994-1995 forecast period), and a soft landing (in which the risk of recession soon after 1995 is reduced by avoiding rapid growth in the near term). Those are the relatively well-foreseen possibilities. In addition, of course, the forecast is subject to risks that are not currently foreseen: in the past, these unforeseen developments have accounted for a large part of forecast error.

A Typical Mature Expansion

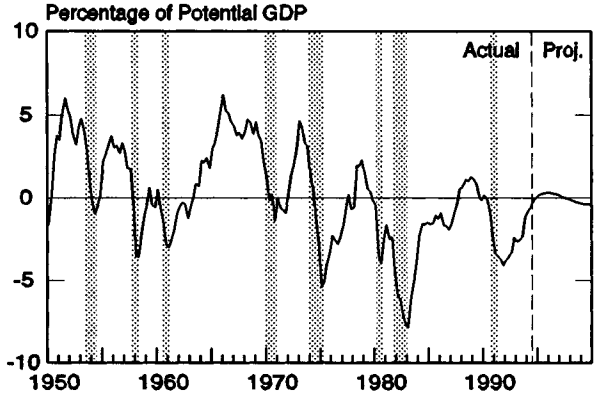
The CBO forecast does not depict the typical behavior of an economy as its expansion matures and reaches a business cycle peak. Normally, when the economy approaches its potential, it continues to grow faster than its potential for some time, and actual GDP rises above potential GDP (see Figure 1-13). That fast growth drives up inflation, short-term interest rates rise rapidly, and the economy goes into recession. Short-term interest rates usually exceed long-term rates for a period of time--a condition that signals a considerable degree of monetary restraint. Every postwar expansion in the United States has ended with a sharp increase in short-term interest rates (see Figure 1-1). The record is similar in other countries. In the CBO forecast, however, the level of real GDP barely exceeds its potential and then quickly falls back. Although inflation and short-term interest rates increase, they rise less than in preceding expansions.

If the economy did follow the typical end-of-expansion path, real GDP would be higher than in the current CBO forecast. However, if such rapid growth materialized, the Federal Reserve would probably act more promptly to limit growth than it has in the past, and as a result inflation need not be substantially higher. In 1988 and 1989, and again this year, the Federal Reserve demonstrated its willingness to raise rates to limit growth even before significant inflation arose. In addition, the Chairman of the Federal Reserve has many times emphasized his determination to avoid letting inflation increase again after enduring two recessions to lower it. Thus, the typical path would have somewhat higher growth and significantly higher short-term interest rates than the CBO forecast. One explanation for the rise in long-term interest rates that occurred this spring would be that participants in the financial markets put a lot of weight on the typical path.

Such an outlook would raise the prospect of a recession to follow the end of the forecast period. Based on past experience, and the lags in operation of monetary policy, a recession would most likely occur beyond the end of CBO's short-term forecast horizon--that is, in the 1996-1999 period when CBO does not attempt to predict cyclical movements in the economy.

Why is this typical end-of-cycle scenario not CBO's forecast? First, the economy may not have as much momentum as it did in previous business cycles. This expansion has progressed at a more moderate pace than average, stemming largely from the unusual degree of fiscal restraint and the need to absorb structural problems such as overbuilding in commercial construction, changes in financial institutions, and the restructuring of many large corporations. Although these structural problems are less of a problem now than during the last three years, fiscal policy continues to be much more restrictive this year than is usually the case for periods when the economy approaches potential. Second, the Federal Reserve acted sooner than usual to restrain inflationary pressures, and this action lessens the likelihood that the economy will continue to grow faster than potential for a long period. Last, the two deepest recessions of the postwar period were preceded by major supply shocks--oil and other commodity prices rose rapidly in 1973 and early 1974, and oil prices jumped again in 1979. Although a similar supply shock is possible for the forecast pe-

Figure 1-13.
The GDP Gap: GDP Typically Overshoots Its Mark



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

NOTE: The GDP gap reported here represents GDP minus potential GDP expressed as a percentage of potential. Historically, expansions typically overshoot the mark so that GDP comes to exceed potential GDP. The actions of the Federal Reserve Board influence this outcome.

riod, CBO does not consider it likely. Therefore, extremely rapid rises in inflation and interest rates, and the resulting deep recession, are less likely than simple averages of past expansions and recessions indicate.

A Soft Landing

Another view of the economy is that the growth of demand is already running out of steam. As a result, growth will slow without much further action by the Federal Reserve. Forecasters who maintain this outlook point in particular to a slowdown in final sales, especially the purchases of consumer durables; the buildup of wholesale and retail inventories that occurred in the second quarter of 1994; and the continued weakness of net exports. In addition, they argue, the rise in long-term interest rates that occurred this spring will dramatically slow housing starts and business fixed investment.

If this scenario developed, inflation would not increase and the Federal Reserve would not need to raise short-term interest rates much further. Although such a soft landing indicates slightly slower growth in the near term, it is optimistic in the sense that it would increase the likelihood that the onset of the next recession would be later than that implied by the scenario for a mature expansion.

Why is this soft-landing scenario not in CBO's forecast? The main reason is that CBO does not detect any strong evidence that the factors driving the past year's growth--especially business investment--have run their course. The evidence on which CBO's forecast is based was described earlier in this chapter. The economy is likely to continue to grow faster than its potential rate for a few more quarters. Further increases in rates combined with the usual slowing of investment after a period of rapid growth will be necessary to slow growth to its potential.

Other Forecasts. The Administration and the July *Blue Chip* consensus forecasts call in large part for soft landings. That is, the economy slows quickly to a rate of growth close to that of potential by early 1995 and, in real terms, short-term interest rates do not rise significantly between now and 1995 (see Table 1-5).

The current CBO forecast for real growth in 1994 is higher by about 0.5 percentage points than the Administration or *Blue Chip* forecasts and somewhat higher than the average of the upper and lower bounds of the ranges anticipated by the Federal Reserve. All forecasts, however, indicate GDP growth close to that of the economy's potential by 1995. On the inflation front, the CBO, Administration, and *Blue Chip* forecasts fall within the ranges anticipated by the Federal Reserve for 1994 and 1995. Since February, the Federal Reserve has revised its inflation forecast for 1994 from about 3 percent to the range of 2.75 percent to 3.0 percent, and expects inflation to increase moderately from 1994 to 1995.[7] In keeping with its outlook for stronger growth, the CBO outlook for civilian unemployment in 1995 is marginally lower than the other forecasts.

The forecasts differ most in their outlook for short-term interest rates. The CBO forecast for the three-month Treasury bill rate is almost 75 basis points higher than that forecast by the Administration and *Blue Chip* in 1995. Since all three forecasts project approximately the same small increase in inflation of about 0.3 percent from 1994 to 1995, real interest rates rise by more in the CBO outlook.

Wider-Ranging Risks

Other risks to the forecast exist, but they are difficult or impossible to evaluate. If it turns out that potential GDP is growing faster than CBO's current estimate of 2.4 percent, the noninflationary growth of the economy could be substantially greater than in the CBO forecast, both in the short run and over the period to 1999. Although CBO believes rapid growth in productivity in the last three years is a cyclical phenomenon and not a change in trend, some analysts feel trend productivity growth in the

7. Note that the Federal Reserve provided a forecast only for 1994 in its *Monetary Policy Report to the Congress Pursuant to the Full Employment and Balanced Growth Act of 1978* (February 1994). The range given--known as the central tendency--includes the majority of the forecasts of Federal Open Market Committee members and other Federal Reserve Bank presidents.

Table 1-5.
Comparison of Congressional Budget Office, Administration, Federal Reserve, and *Blue Chip* Economic Forecasts

	1993	Forecast 1994	Forecast 1995
	Fourth Quarter to Fourth Quarter (Percentage change)		
Nominal GDP			
CBO	5.4	6.2	5.3
Administration	5.4	5.8	5.6
Federal Reserve[a]	5.4	5.50 to 6.00	5.00 to 5.50
Blue Chip	5.4	5.9	5.8
Real GDP[b]			
CBO	3.1	3.6	2.7
Administration	3.1	3.0	2.7
Federal Reserve[a]	3.1	3.00 to 3.25	2.50 to 2.75
Blue Chip	3.1	3.1	2.6
Consumer Price Index[c]			
CBO	2.7	2.8	3.2
Administration	2.7	2.9	3.2
Federal Reserve[a]	2.7	2.75 to 3.00	2.75 to 3.50
Blue Chip	2.7	2.8	3.4
	Average Level in the Fourth Quarter (Percent)		
Civilian Unemployment Rate[d]			
CBO	*6.5*	6.0	5.8
Administration	*6.5*	6.2	6.2
Federal Reserve[a]	*6.5*	6.00 to 6.50	6.00 to 6.25
Blue Chip	*6.5*	6.1	5.9
	Calendar Year Averages (Percent)		
Three-Month Treasury Bill Rate			
CBO	3.0	4.1	5.5
Administration	3.0	4.0	4.7
Federal Reserve[a]	3.0	n.a.	n.a.
Blue Chip	3.0	4.0	4.8
Ten-Year Treasury Note Rate			
CBO	5.9	6.8	6.8
Administration	5.9	6.8	7.0
Federal Reserve[a]	5.9	n.a.	n.a.
Blue Chip[e]	5.9	6.8	7.2

SOURCES: Congressional Budget Office; Office of Management and Budget; Federal Reserve Board; Eggert Economic Enterprises, Inc., *Blue Chip Economic Indicators* (July 10, 1994).

NOTE: n.a. = not applicable.

a. The Federal Reserve figures are the ranges--known as the central tendency--that include the majority of the forecasts of Federal Open Market Committee members and other Federal Reserve Bank presidents.

b. Based on constant 1987 dollars.

c. The consumer price index for all urban consumers (CPI-U).

d. The Bureau of Labor Statistics changed the unemployment survey in January 1994. The CBO forecast reported in this table uses the new survey methodology. Data for 1993, shown in italics, use pre-1994 methodology.

e. *Blue Chip* does not project a 10-year note rate. The values shown here for the 10-year note rate are based on the *Blue Chip* projections of the Aaa bond rate, adjusted by CBO to reflect the estimated spread between Aaa bonds and 10-year Treasury notes.

1990s will indeed be higher. If so, the Federal Reserve would have to recognize the potential for higher growth, a difficult task. The main way higher potential growth would manifest itself is through lower inflation, but inflation lags behind growth by a substantial period. By contrast, the goal of the Federal Reserve is to act in anticipation of inflation.

If other countries also expand at the same time, interest rates could be even higher than is typical at the end of a business-cycle expansion. When business cycles are coordinated among countries, they can have a powerful effect on world capital markets. In this case, the U.S. expansion, which started several years before the recoveries in Europe and Japan, would have to be prolonged long enough for the other economies to catch up.

Possibilities of a weaker outcome also exist. The slow growth of the labor force in the United States could sharply reduce the growth of potential output, implying that even moderate growth will cause the economy to be further above potential than CBO estimates. Increases in inflation would then be larger and sooner than CBO anticipates, and these increases would limit the Federal Reserve's freedom of movement. If that were to occur, sharply higher interest rates in 1995 and a greater risk of recession in 1996 could well be the result.

Finally, the role of political events cannot be discounted. The Persian Gulf War complicated policy management in 1990 and played an important role in the recession. Certainly, nothing suggests that the international scene is more stable now than it was in 1990: the potential for destabilizing events exists in the Balkans, several countries of the former Soviet Union, and Korea. How these events might play out in the world economy is impossible to predict.